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BUREAU OF PLANT INDUSTRY

PLANT IMMIGRANTS.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is made up of descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS which will be sent you in the autumn and in which will be listed all plants available at that time. Regular requests checked off on the check list sent out with the catalogue are not kept over from year to year. If you are especially interested in some particular plant in the catalogue write and explain in detail your fitness to handle it.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

David Fairchild,

Agricultural Explorer in Charge.

March 17, 1919.

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Canna edulis (Cannaceae), 46313. **Edible canna.** From Hawaii. Presented by Mr. J. M. Westgate, Hawaii Agricultural Experiment Station, Honolulu. An herbaceous perennial with purple stems 8 to 12 feet high, found in the West Indies and South America. The large leaves are green or bronze and the small red flowers are usually in pairs in a lax raceme. Starch is procured from the thick, edible rootstock and for this purpose the plant is widely cultivated in the tropics. (Adapted from Bailey, Standard Cyclopedia of Horticulture, vol. 2, p. 657.) "The cultivated canna grows like a weed on the everglade soils of southern Florida and it is well worth trying this starch-producing crop there in comparison with the Bermuda arrowroot (*Maranta arundinacea*)." (Fairchild.)

Carica sp. (Papayaceae), 46321. From Mexico. Presented by Mr. Harry Hummel, Tampico. "**Papaya broncho.** This is the ever-blooming papaya and produces a fruit about 3 inches long and 2 inches in diameter. The trees grow wild in the woods, can be transplanted at any time of the year, require no attention except watering, and I believe if cultivated will produce a larger fruit." (Hummel.)

Carica papaya (Papayaceae), 46334. **Papaya.** From Mexico. Presented by Mr. Harry Hummel, Tampico. "**Papaya real.** The fruit from which these seeds were taken was 14 inches long and 6 inches in diameter. It is the very best papaya that grows in the Tampico district and is a delicious fruit equal to any muskmelon. The trees grow in sandy loam in a climate which very seldom goes below 40° F. and reaches as high as 110° F." (Hummel.)

Chenopodium nuttalliae (Chenopodiaceae), 46311. From Mexico. Presented by Mrs. Zelia Nuttall, Coyoacan. "Seeds of **huauhtzontli,** the unripe inflorescence of which is a favorite vegetable of the Mexican Indians. It is boiled or fried in butter - stem and all - small flowering tips being selected and tied together. Much used in Lent. It is very nourishing and palatable. The seeds must be in the milk (like corn, - half ripe). Combines vegetable and cereal." (Nuttall.) "Native name, **xochihuauhtli,** (flowering huauhtli). A plant cultivated near the City of Mexico for the sake of its prolific branching inflorescences, which are gathered before they are quite mature and while the seeds are still soft,

and cooked as a vegetable with other ingredients. This variety, with yellowish or pale brown discoid seeds, is the most popular. The inflorescences are known by the Aztec name **huauhtzontli,** signifying 'hauhtli-heads'. Botanically the plant is closely allied to *Chenopodium paganum* and *Chenopodium album.* It is quite distinct from *Chenopodium quinoa,* the celebrated food-staple of the Peruvian highlands; and it must not be confused with the plant called **michihuauhtli** (fish-egg hauhtli) which is a white-seeded Amaranthus, not a Chenopodium." (W. E. Safford.)

Citrus grandis (Rutaceae), 46336. **Pummelo.** From Shenchowfu, Hunan, China. Presented by Mr. N. T. Johnson American Consul, Changsha, China, who received them from Rev. J. Frank Bucher, Shenchowfu. "Red-fleshed pummelo. Ripens earliest of all the pummeloes on our compound. It is at least two months earlier than other varieties." (Bucher.)

Freycinetia banksii (Pandanaceae), 46317. From New Zealand. Presented by Mr. H. R. Wright, Auckland. "The fruit proper does not ripen until many months after the ripening of the white bracts. In size and shape it is almost identical with *Monstera deliciosa.*" (Wright.) A vine which climbs to the tops of the tallest trees along the banks of rivers in the North Island of New Zealand. The linear-lanceolate leaves are borne in clusters along the stem and the flowers appear in the center of these leaf-clusters. It is called **Lon marrar** by the natives, who eat the white fleshy bracts of the flowers for their sweet sugary juice. (Adapted from Hooker, Companion to the Botanical Magazine, vol. 2, p. 377.)

Garcinia mangostana (Clusiaceae), 46306. **Mangosteen.** From Buitenzorg, Java. Presented by the Director, Department of Agriculture. One of the most delicious fruits of the tropics. The handsome tree is 25 to 30 feet in height, of compact growth, regular in outline, and with dark green foliage. It comes into bearing at about the ninth year. The rose-pink flowers are 1½ inches across, and there are two blooming periods each year. The round fruits, about the size of a mandarin orange, are borne from buds produced near the tips of short branches, mainly on the outside of the tree. The rind is thick and the flesh divided into segments much like the orange. The texture resembles a well-ripened plum, and the taste is delicious. In the East Indies

it is planted by the natives as a dooryard tree. It is very hard to establish the young trees which accounts for the small plantings which have been made. (Adapted from Bailey, Standard Cyclopedia of Horticulture, vol. 4, p. 1889–90.)

Persea americana (Amygdalaceae), 46337. **Avocado.** Grown at the Plant Introduction Field Station, Miami, Fla. A Mexican avocado, which has proved quite frost-resistant. This variety is a seedling grown from seed received under S. P. I. No. 19094. The fruit ripens at Miami during the months of August, September and October. It is pear-shaped and of a purplish maroon color, weighs 11 to 12 ounces, and is of fair quality.

Phaseolus lunatus (Fabaceae), 46304. **Lima bean.** From Paraguay. Presented by Mr. Thomas R. Gwynn, Concepcion. "The Linconia butter bean is the very finest that I have ever come across. It yields in full blast for at least eight months and with a good season will give, in a climate like this, a year or more in superabundance continually, day after day. The plant is extraordinarily hardy and thrifty, as neither the extreme drought nor the hard frosts of last year put it out of business. When I pulled the plants September first they were still bearing (not a great deal). I planted this year September fifteenth, and as we had a splendid year the plants are extra fine and are loaded with fruit of all sizes, and flowers to the very tip ends. I have them planted along a wire fence with poles 12 feet high stuck in about one yard apart." (Gwynn.)

Pittosporum ralphii (Pittosporaceae), 46319. From New Zealand. Presented by Mr. H. R. Wright, Auckland. A laxly branched shrub 15 to 20 feet high, found in the central district of the North Island of New Zealand. The shoots, sepals, and under surface of the coriaceous leaves are covered with close white hairs. The fascicles of small bell-shaped, dark crimson flowers, with protruding yellow anthers resting on the downy white young leaves, make it a very attractive ornamental shrub. (Adapted from Laing and Blackwell, Plants of New Zealand, p. 195.)

Solanum mammosum (Solanaceae), 46374. **Susumber.** From Porto Rico. Presented by Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Massachusetts. Collected by Mr. Sylvester Baxter. "In Jamaica, difficulties

to a healthy maturity have been met by grafting them on *Solanum mammosum*, the so-called **susumber tree**, a rank, tropical weed closely related botanically to the egg-plant. The grafts are said to produce fruits of large size and fine flavor, and as the stock is perennial, bearing is continual." (Contributions of the U. S. National Herbarium, vol. 8, p. 242.)

Zea mays (Poaceae), 46314. **Corn.** From Mexico. Presented by Mr. Arnulfo Ballesteros, La Barca, Jalisco, at the request of Mr. John R. Sillman, American Consul, Guadalajara. "Early **Pipitillo corn**, which is cultivated in the swampy lands of Chapala. This corn is early in this region only when sown in the months of January, February, and the early part of March. It is then possible for the harvesting and drying to be completed four months afterward. If, on the other hand, it is sown in May or June, the time required for it to mature is six months." (Ballesteros.)

Notes from Correspondents.

A letter dated September 13, 1918, from Mr. H. Tisell, of Orange Center, Orange County, Florida, contains the following translation of an article on **Rismollan**, "Svenskt Land," December 15, 1917, p. 338. Believing that the article will prove of interest to our collaborators, we are quoting it entire.

Rismollan. A Newly Discovered Utility Plant.

"That necessity is the mother of invention is found more and more true in our days.

"In all walks of life the human intelligence is trying to procure substitutes for all that the world war has forced us to do without. What we especially have great need of is bread and more bread. The cultivation of bread grains has fortunately increased, but not sufficiently to fill our needs. It has therefore been necessary to mix all kinds of possible and impossible substances with the flour to make it go farther.

"In Skane (the most southern district of Sweden), a farmer, Ernst A. Larsson, Filborna, Halsingborg, has drawn attention to a very fruitful plant: Rismollan (*Chenopodium quinoa*), the grain of which can be milled into flour and cooked as porridge. The leaves provide a tasty 'spinach.'

"Mr. Larsson himself tells that during the winter

of 1916-17, he read an article in a horticultural paper about Rismollan and its phenomenal seed capacity. He became so much interested that he decided to procure some seed for a trial planting. This, however, was found to be easier said than done. In Sweden none was to be had, and the wide-awake Germans had taken the Rismollan in hand and would not spare any of the valuable seed. Finally Mr. Larsson succeeded in obtaining a small amount of seed from the Botanical Garden in Copenhagen. He planted half the seed in the open, April 15; but the soil had not a sufficiently high temperature and the plants were small and weak. The second half was planted May 2, when the soil was sufficiently warm; the seed sprouted well, and the plants developed during the summer into real bushes, 2 m. (6 ft. 6 in.) tall.

"For best results, the seed should be planted in hills; when the plants are 10 cm. (4 in.) in height they should be thinned out and the strongest left in each hill.

"The grain ripened in the middle of September and yielded approximately 100,000 grains which must be considered an extraordinary result. The seeds are very easily threshed out; they fall from the seed stalks when rubbed between the hands.

"An analysis made at the Central Institute of Stockholm is as follows:

Water		11.56 %
Raw protein		14.88 "
Raw fat		5.84 "
Starch	52.67	
Other nitrogen-free extracts	8.90	
Fiber	2.86	
		64.43 "
Ash		3.29 "
		100.00 %
Pure protein		12.63 %
Amido bodies		2.25 "
Soluble albumen		10.06 "

"Rismollan comes from the plateaus of South America. Since olden times it has been cultivated in Chile and Peru, where it serves millions of people as food and has as great importance and use as the potato. Like everything else pertaining to agriculture, this plant was the object of religious rites and was cultivated

with the greatest care by the Incas.

"In Germany, where every means must be used for securing food for the people, there are this year large plantations; also in Austria, and in the occupied portions of Belgium, France, and Russia.

"Next year Mr. Larsson expects to be able to plant at least one-half hectare (nearly 2½ A.) with Rismollan and this will mean a considerable increase in the production of food . "

Notes on Behavior of Previous Introductions.

Mr. Adolf K. Polansky, Lyons, Texas, reports as follows, in a letter dated January 5, 1919:

"*Amygdalus persica,* S. P. I. No. 24807, grew 4 feet tall last year and looks very healthy and strong, although the entire year was hot and dry.

"*Jasminum floridum,* S. P. I. No. 38154, is another fine evergreen shrub which should be in every yard. The handsome green foliage and branches, and showy yellow flowers were not injured by a severe freeze in December, 1918. The plant is always full of flowers.

"*Helianthus angustifolius,* S. P. I. No. 44103, does very well; it begins to bloom about the middle of August, and blooms until killed by the frost. It has large masses of beautiful yellow flowers."

Mr. F. A. Ward, writes, October 28, 1918, from Cortland, New York:

"*Helianthus angustifolius,* S. P. I. No. 44103, thrives exceedingly well; blooms freely and matures plenty of seed. The chickadees are very fond of the seeds, and I would suggest it as a good plant to attract birds in the fall and early winter."

Mrs. W. J. Tinnin, of Fresno, California, reports in a letter dated October 13, 1918:

"*Phalocallis herberti,* S. P. I. No. 33997, the yellow iris bulb from Argentina, has done wonderfully well. It blossomed from June 8 to July 19. I have only 5 bulbs; it is very satisfactory.

"*Buddleia davidii,* S. P. I. No. 30806, we have distributed to dozens of people, and have several large bushes in bloom from early summer until frost comes."

United States Department of Agriculture.
Bureau of Plant Industry.
Office of Foreign Seed and Plant Introduction.
Washington, D. C.

Washington Scientific Staff.

David Fairchild, Agricultural Explorer in Charge.
P. H. Dorsett, Plant Introducer, in Charge of Plant Introduction Field Stations.
B. T. Galloway, Plant Pathologist.
Peter Bisset, Plant Introducer, in Charge of Foreign Plant Distribution.
J. B. Norton, and Wilson Popenoe, Agricultural Explorers.
H. C. Skeels, G. P. Van Eseltine, and R. A. Young, Botanical Assistants.
Miss Bessie Broadbent, E. L. Crandall, L. G. Hoover, J. Harry Johnson, R. N. Jones, P. G. Russell, and C. C. Thomas, Assistants.
Edward Goucher, Plant Propagator.

Field Stations Scientific Staff.

R. L. Beagles, Superintendent in Charge, Plant Introduction Field Station, Chico, Cal.
E. O. Orpet, Assistant in Plant Introduction.
J. E. Morrow, Superintendent in Charge, (Yarrow) Plant Introduction Field Station, Rockville, Md.
Edward Simmonds, Superintendent in Charge, Plant Introduction Field Station, Miami, Fla.
D. A. Bisset, Assistant in Charge, Plant Introduction Field Station, Brooksville, Fla.
Henry E. Juenemann, Superintendent in Charge, Plant Introduction Field Station, Bellingham, Wash.
E. J. Rankin, Assistant in Charge, Plant Introduction Field Station, Savannah, Georgia.

Collaborators.

Mr. Aaron Aaronsohn, Haifa, Palestine.
Mr. Thomas W. Brown, Cairo, Egypt.
Mr. H. M. Curran, Laurel, Md.
Mr. M. J. Dorsey, University Farm, St. Paul, Minn.
Mr. Robt. H. Forbes, Societe Sultanienne D'Agriculture, Cairo, Egypt.
Mr. A. C. Hartless, Saharanpur, India.
Mr. Barbour Lathrop, Chicago, Ill.
Mr. H. Nehrling, Gotha, Fla.
Mr. Charles Simpson, Littleriver, Fla.
Mr. H. P. Stuckey, Experiment, Ga.
Dr. L. Trabut, Director, Service Botanique, Algiers, Algeria.
Mr. H. N. Whitford, School of Forestry, New Haven, Conn.
Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass.
Dr. F. A. Woods, Washington, D. C.